

Lecture 8

Monopoly pricing – part III



microeconomics II
first module

Tying

- ★ Tying is when the seller **requires** the customer to purchase one good in order to purchase another
 - ◆ IBM mainframe and computer cards
 - ◆ PlayStation and game discs
- ★ Allows firm to **measure/estimate** demand and practice price discrimination more effectively
- ★ Goal is to extract more surplus from **enthusiasts**
- ★ It is **profit maximizing** because heavy users have more **inelastic demand**.

Case study

- ★ We will now examine the famous case of tying, that **Polaroid** applied in 1971
- ★ From the 60's to date the industry of photography **has changed** dramatically.



The amazing instant photography

- ★ In 1971, Polaroid **introduced** the SX-70 camera
- ★ Of course, Polaroid had filed for a **patent** for the camera thus, Polaroid had a **monopoly** in instant cameras
- ★ Polaroid **did not intend** to make its profit from the camera!
- ★ The plan was that
 - ◆ the **camera** would be used as the **entry fee**, A
 - ◆ and **film roll** would be used as **per unit price**, p
- ★ So, profit would come from the **film sales!**
- ★ The only problem was that Polaroid **did not** have a monopoly in **film roll**.

Polaroid special film

- ★ Monopoly in film was the **most essential** for Polaroid if **ordinary film** could be used, its **price** would be close to MC
- ★ Polaroid **solved** this problem by making the camera **work only** with **Polaroid special film**
- ★ Polaroid developed a **monopoly** in both counterparts and used **tying** as a **two-part tariff**
 - buying the **camera** was like an **entry fee**, then the real money were made from film sales!
- ★ Of course, producing a camera is **not free of cost** to the producer
 - as is the entrance in a **bowling alley**, for instance.

Second-degree PD Tying

Polaroid's profit

★ Analytical framework

$$\Pi = p \cdot Q + n \cdot A - C_1(Q) - C_2(n)$$

★ There was considerable **heterogeneity** of consumer demands in the industry of photography.

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Second-degree PD Tying

Prices and success

★ Prices:

- ◆ The film's price was significantly **above** marginal cost
- ◆ The price of the camera was **cheaper** than what it would have been if the camera was priced monopolistically

★ Compared to what they would have paid **if regular** monopoly pricing was used:

- ◆ Usuals ended up **spending less** with the 2PT, because they did not consume much film
- ◆ Enthusiasts ended up **paying more** with the 2PT, because they used a lot of film.

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Second-degree PD

Peak-load pricing

★ For some products demand may be **uneven**

- ◆ High at some particular times/periods (peak periods)
- ◆ Low at some other times/periods

★ **Capacity constraints** may also cause marginal costs to be **higher** at periods of high demand

★ Profit maximization implies that the firm will charge **higher prices** during peak periods

★ Examples: hotels, gyms, cinemas, electricity.

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Second-degree PD Peak-load pricing

Peak-load pricing

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Second-degree PD Peak-load pricing

Objectives of peak-load pricing

★ **Profit maximization**
charge more when consumers **need** you more

★ **Economizing resources**
with the price difference the demand may **even out** – some consumers will choose to shift consumption to the slow period

★ Increase **efficiency**
by charging customers closer to **true marginal cost** of the consumption period.

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Second-degree PD

Bundling

★ Bundling is **packaging** two or more different products together to gain a pricing advantage

★ Bundling might be a **profit maximizing** method of pricing, when simple PD is not possible

★ Bundling **requires** two things to work:

1. **Heterogeneous** customers
2. Demands must be **negatively correlated**.

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Bundling

Case study

- In 2004, Universal™ was the **distributor** of two great motion pictures:
 - Crash* (Столкновение)
 - The Notebook* (Дневник памяти)
- Universal decided to **bundle** the two films, so that no movie theater could lease one without the other
- Why** would a company do this? _

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Bundling

Without bundling

- Willingness to pay by theater

	<i>The Notebook</i>	<i>Crash</i>
Theater A (NY)	\$50,000	\$25,000
Theater B (GA)	\$30,000	\$40,000

- Renting the movies **separately** would result each theater paying the **lowest reservation price** per movie:
 - If we charge 50K for *The Notebook*, revenue is 50K
If we charge 30K, revenue will be 60K
 - If we charge 40K for *Crash* revenue is 40K
If we charge 25K, revenue is 50K
 - Total revenue is \$110,000 _

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Bundling

With bundling

- Willingness to pay by theater

	<i>The Notebook</i>	<i>Crash</i>
Theater A (NY)	\$50,000	\$25,000
Theater B (GA)	\$30,000	\$40,000

- Now assume that movies **are bundled**
- We can charge 70K for the bundle
 - Both** theaters will buy
 - Total revenue is \$140,000
 - That is, 30K **more**, just because of bundling! _

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Bundling

Reversed relative valuations

- Willingness to pay by theater

	<i>The Notebook</i>	<i>Crash</i>
Theater A (NY)	\$50,000	\$25,000
Theater B (GA)	\$30,000	\$40,000

- More profitable to bundle because **relative valuations** of two films are **reversed**
- Demands are **negatively correlated**
 - NY is willing to pay **more** for *The Notebook* than *Crash*
 - GA is willing to pay **more** for *Crash* than *The Notebook* _

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Bundling

Non-reversed relative valuations

- Consider this case with **positively correlated** demands

	<i>Kill Bill 2</i>	<i>Alexander</i>
Theater C	\$20,000	\$12,000
Theater D	\$15,000	\$9,000

- If the movies are **bundled**:
 - Price for the bundle should be set to 24K
 - Revenue would be 48K
- If movies are offered **separately**:
 - Kill Bill 2* will go for 15K and *Alexander* for 9K
 - Revenue would again be 48K
- Bundling makes no difference** _

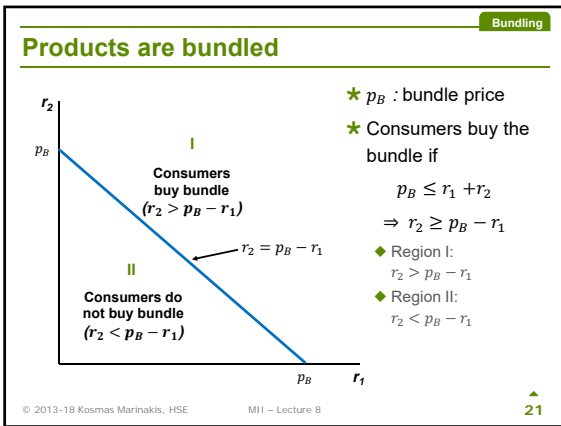
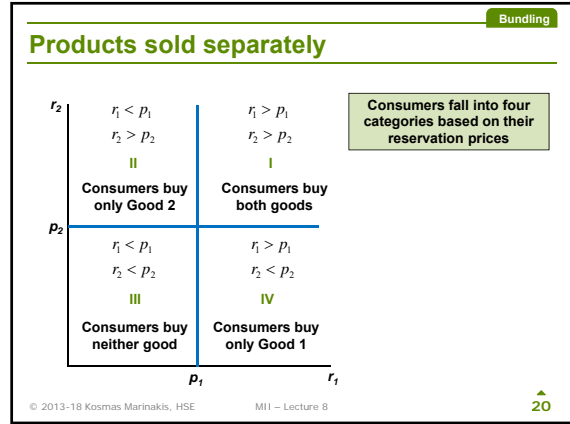
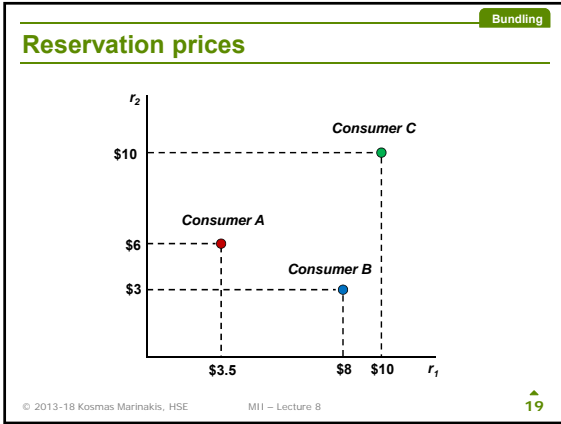
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Bundling

Two goods – many consumers

- What if we have **many** consumers with **different** combinations of reservation prices for the two goods?
- We can represent consumption decisions **graphically**
 - r_1 is **reservation** price of consumer for **good 1**
 - r_2 is **reservation** price of consumer for **good 2** _

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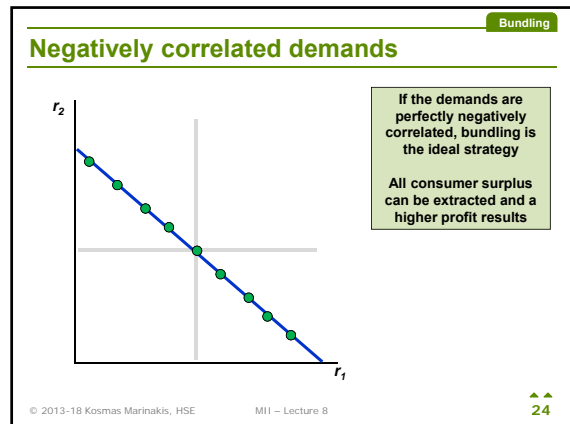
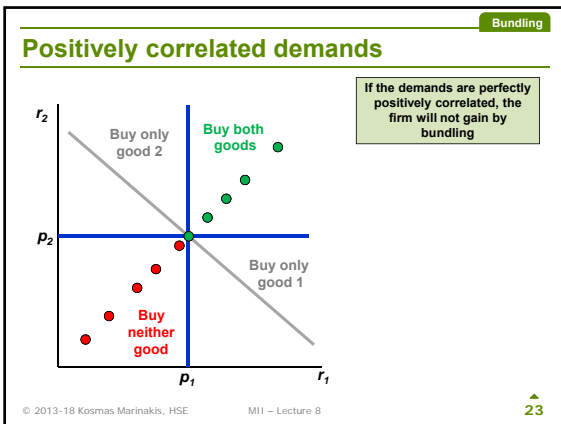


Bundling

Effectiveness

- ★ The effectiveness of bundling depends upon the **degree of negative correlation** between the demands of the two goods
- best when* consumers who have **high** reservation price for Good 1 have a **low** reservation price for Good 2 and vice versa
- ★ We can see this **graphically** looking at positively and negatively correlated prices

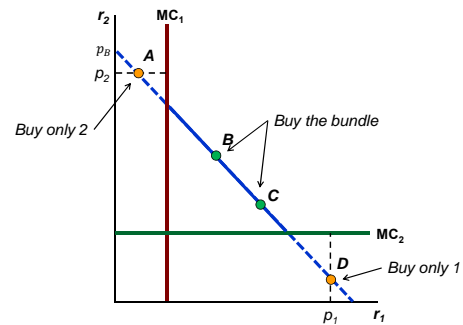
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Mixed bundling

- ★ Practice of selling two or more goods **both** as a package and individually
- ★ This **differs** from pure bundling where products are sold only as a package
- ★ Mixed bundling is good strategy when **one** of the following happens
 - ◆ Demands are somewhat negatively correlated
 - ◆ Marginal cost of production is significant.

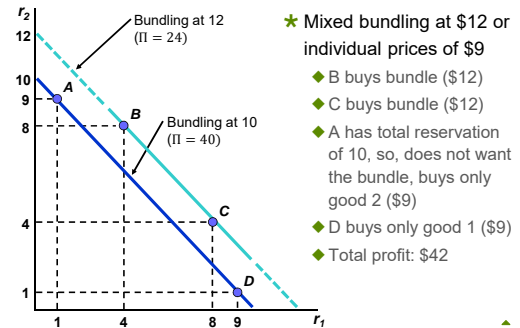
Mixed vs. pure bundling with MC



Mixed bundling with no cost

- ★ Even if **MC is zero**, mixed bundling can still be more profitable if consumer demands are **not perfectly** negatively correlated
- ★ Lets see a **figure** with an **example...**

Zero MC – example



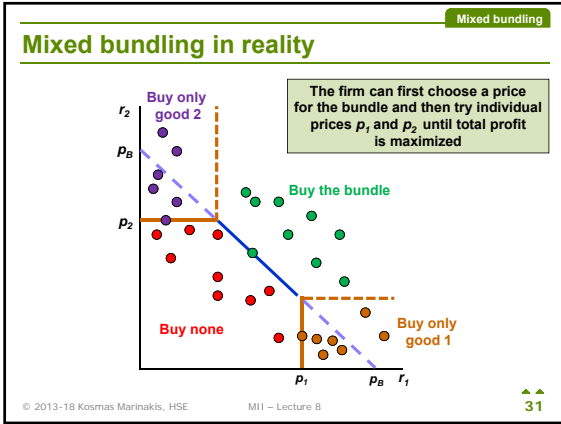
- ★ Mixed bundling at \$12 or individual prices of \$9
 - ◆ B buys bundle (\$12)
 - ◆ C buys bundle (\$12)
 - ◆ A has a total reservation of 10, so, does not want the bundle, buys only good 2 (\$9)
 - ◆ D buys only good 1 (\$9)
 - ◆ Total profit: \$42

Bundling in practice


- ★ Car purchasing
 - bundles of extras such as **door plates** with **vanity mirrors**
- ★ Vacation travel
 - bundling **hotel** with **air fare**
- ★ Subscription television
 - sports** and **fashion** channels bundled together.

Mixed bundling with data

- ★ **Real firms** use market **surveys** to estimate reservation prices
- ★ The **goal** is to design a **pricing strategy** from the survey results
- ★ The following **example** illustrates how a company will **interpret** the data to conduct mixed bundling.



Thank you!


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